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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/416,098	10/12/1999	TERESA H. MENG	259697	5713
27498	7590	10/18/2004		
PILLSBURY WINTHROP LLP 2475 HANOVER STREET PALO ALTO, CA 94304-1114			EXAMINER LIU, SHUWANG	
			ART UNIT 2634	PAPER NUMBER

DATE MAILED: 10/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/416,098

Applicant(s)

MENG ET AL.

Examiner

Shuwang Liu

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,5,8,9,15,16,18,19,22,23,29,31,34 and 35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,8,9,15,16,18,19,22,23,29,31,34 and 35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Request for Continued Examination

1. The request filed on July 01, 2004, for a Request for Continued Examination (RCE) under 37 CFR 1.114 based on parent Application No. 09/416,098 is acceptable and a RCE has been established. An action on the RCE follows.

Response to Arguments

2. Applicant's arguments regarding claim 29 filed on 07/01/04 have been fully considered but they are not persuasive. The Examiner has thoroughly reviewed Applicant's arguments but firmly believes that the cited reference reasonably and properly meet the claimed limitation as rejected.

Applicant's argument – Applicants have "digital data" being digitally shifted," something neither taught nor suggested by the '847 patent.

Examiner's response – see column 4, lines 1-10 and column 6, lines 13-15 and the Examiner's response in the previous office action for this argument.

3. Applicant's arguments with respect to claims, 1, 15, 34 and 35 have been considered but are moot in view of the new ground(s) of rejection. However, the Examiner has to point out again that the recitation "using one of OFDM, NBFDM, DMT, FDMA and TDMA" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where

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the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). The recitation also is the intended use. The intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

4. The rejection for claims 1, 2, 4, 5, 8, 9, 15, 16, 18, 19, 22, 23, 34 and 35 under 35 U.S.C. 112, first paragraph, is withdrawn.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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6. Claim 29 is rejected under 35 U.S.C. 102(b) as being anticipated by Clarke et al. (US 5781847).

As shown in figures 1 and 3, Clarke et al. discloses a device adapted to be used in a first unit (receiver, 20 and 40) that can communicate with a second unit (transmitter, 10a or 10b) using a common carrier frequency (abstract), the device comprising:

a frequency lock loop (60 and 24 a or 24 b in figure 3) that is coupled to receive a digital representation of a first signal transmitted (column 5, lines 12-15) by the second unit (transmitter), the frequency lock loop being adapted to detect a carrier frequency offset in the first signal and to produce offset information corresponding thereto (column 7, lines 17-20 and column 11, lines 22-35); and

a frequency shift block (39, 29) that is coupled to receive the offset information and data to be transmitted by the first unit (receiver) in a second signal to be received by the second unit, the frequency shift block being adapted to digitally shift the digital data (column 4, lines 1-10 and column 6, lines 13-15) in frequency in accordance with the common carrier frequency and the carrier frequency offset so that the effects of the carrier frequency offset to be perceived by the second unit will be substantially reduced (abstract, column 5, lines 26-34, column 7, lines 17-23 and column 11, lines 42-60).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 2, 4, 5, 8, 15, 16, 18, 19, 22, 34 and 35 are rejected under 35 U.S.C. 103(3) as being unpatentable over anticipated by Liu et al. (US 5,982,809) in view of Lee (US 6,169,733).

As shown in figures 1 and 2, Liu et al. disclose a device and a method to be used in a communication system in which a first unit (transmitter) communicates with a second (receiver) using a common frequency (ω_0 carrier frequency) (column 6, lines 1-23), comprising:

(1) regarding claims 1, 15 and 35:

means (38 and 33) for detecting an offset (44, $\delta\omega_0$ see column 6, lines 35-44) between the common frequency used by the first unit and the second unit in a first signal transmitted by the first unit and received by second unit (column 7, lines 55-65); and

means (36, 34 and 33) for adjusting the common frequency in accordance with the offset (44) in a second signal to be transmitted by the second unit (by 33 in the second unit) and to be received by the first unit (by 64 in the first unit) so that the effects of the offset to be perceived by the first unit will be substantially reduced (abstract).

Furthermore, the device comprising:

means (28 and 34) for communicating information corresponding to the detected offset from the second unit to the first unit as recited in claim 35.

(2) regarding claim 34:

means (38, 33 and 46) for detecting an offset (44, $\delta\omega_0$ see column 6, lines 35-44) between the common frequency used by the first unit and the second unit in a first signal transmitted by the first unit and received by second unit (column 7, lines 55-65);

means (28 and 34) for communicating information corresponding to the detected offset from the second unit to the first unit; and

means (36, 34 and 33) for adjusting the common frequency in accordance with the offset (44) in a second signal to be transmitted by the first unit (by 64 in the first unit) and to be received by the second unit (by 33 in the second unit) so that the effects of the offset to be perceived by the first unit will be substantially reduced (abstract).

(3) regarding claims 2 and 16:

wherein the common frequency is a carrier frequency (ω_0).

(4) regarding claims 4 and 18:

wherein the means for detecting the offset includes means (46) for performing a correlation on a digital representation of the first signal so as to lock onto the offset in the carrier frequency (column 3, lines 13-19).

(5) regarding claims 5 and 19:

wherein the means for adjusting the common frequency includes a means (33) for digitally shifting data in frequency to be transmitted in accordance with the carrier frequency and the offset.

(6) regarding claims 8 and 22:

wherein the means for detecting the offset includes means includes means (33)

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for locking onto the offset in the carrier frequency and for producing an output signal corresponding thereto.

Furthermore, Liu et al. discloses that "The system of FIG. 1 is preferably implemented using one or more programmable digital signal processors (DSPs) and one or more memories. However, the system may be implemented in various manners, including one or more programmable CPUs, microcontrollers or other programmable logic, discrete logic, etc." (column 4, lines 19-24).

Liu et al. discloses all of the subject matter as described above except for specifically teaching the communication system using one of OFDM, NBFDM, DMT, FDMA and TDMA as recited in the preamble of the claims.

Lee teaches a digital signal processor (DSP) (27 in figure 1), which is able to operate in different standards, for example, CDMA, TDMA or AMPS (column 4, line 48-column 6, line 50).

It would be desirable to implement a system to have different protocols, for example, CDMA, TDMA, FDMA, or AMPS, by using a programmable DSP in order to provide a single system to communicate with a plurality of different systems. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the programmable DSP as taught by Lee to implement the system of Liu et al. in order to provide the system with different protocols, for example, CDMA, TDMA, or AMPS. In so doing, the communication system increases the flexibility and mobility, provides a low cost modulation platform which can be changed under software control

from one modulation format to another, and includes the ability to instantly switch from one format to another.

9. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clarke et al. (US 5,781,847) in view of Theus et al. (US 5,805,029).

As shown in figures 1 and 3 and described in item 4 above, Clarke et al. discloses a frequency lock loop (60 and 24 a or 24 b in figure 3) and a variably adjustable device (13a or 13b) as recited in the claim.

Clarke et al. discloses all of the subject matter as described above except for specifically teaching a crystal oscillator that supplies a reference frequency for modulating a second signal to be perceived by the second unit in accordance with the common carrier frequency.

Theus et al. teaches a digital adjustable crystal oscillator (1 and 2 in figures 1 and 4).

It would be desirable to use a crystal oscillator in order to provide frequency changes over a greater frequency range while still providing stable oscillation (column 1, lines 46-49, Theus et al.). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the crystal oscillator as taught by Theus et al. to replace the oscillator 12a or 12b of Clarke et al. in order to provide frequency changes over a greater frequency range while still providing stable oscillation.

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10. Claims 9 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. (US 5,982,809) and Lee as applied in claims 1, 2, 15, 16, and 22, further in view of Theus et al. (US 5,805,029).

Liu et al. discloses all of the subject matter as described above except for specifically teaching means for variably adjusting a reference frequency output by a crystal oscillator in accordance with the output signal generated by the locking means as recited in claims.

Theus et al. teaches a digital adjustable crystal oscillator (1 and 2 in figures 1 and 4).

It would be desirable to use a crystal oscillator in order to provide frequency changes over a greater frequency range while still providing stable oscillation (column 1, lines 46-49, Theus et al.). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the crystal oscillator as taught by Theus et al. to replace the digital oscillator 34 of Liu et al. in order to provide frequency changes over a greater frequency range while still providing stable oscillation.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shuwang Liu whose telephone number is (571) 272-3036.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin, can be reached at (571) 272-3056.

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Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

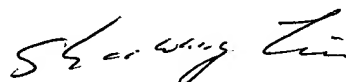
Washington, D.C. 20231

or faxed to:

(703) 872-9306 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.



Shuwang Liu
Primary Examiner
Art Unit 2634

October 13, 2004